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What is claimed is:

- 1 1. A memory in a computer storing a data structure for access by one or more programs
- 2 executing on said computer, said data structure suitable for usage-based licensing of resources, said
- 3 data structure comprising:
- 4 a resource list having one or more resource entries, each of which comprises data
- 5 declaring the existence of a particular resource or a group of two or more resources offered for
- 6 usage-based licensing;
- 7 a pointer in each resource entry pointing to a distillation program which, when
- 8 executed, converts raw usage data for the corresponding resource by a particular customer into
- 9 one or more items of metric data summarizing at least one aspect of usage of said resource by
- 10 said customer;
- 11 an organization data entry representing a vendor organization that supplies said
- 12 resources for licensing and which created said resource list, said organization data entry
- 13 including a pointer to said resource list and including a pointer to a provisioning list;
- 14 at least one provisioning list data entry containing one or more provisioning item data
- 15 entrys, each said provisioning item data entry comprising data defining licensing terms for a
- 16 particular resource or a group of two or more resources offered as a package and containing a
- 17 pointer to one or more resource entrys for which said provisioning item represents licensing
- 18 terms;
- 19 an authorization node data entry corresponding to a license which has been granted
- 20 under a particular provisioning item data entry, each authorization node data entry containing a
- 21 pointer to the provisioning item data entry which records the license terms said authorization
- 22 node data entry represents;
- 23 at least one user and/or distribution organization data entry defining a user and/or
- 24 distribution organization, and containing a pointer to at least one authorization node data entry;
- 25 at least one resource authorization node data entry corresponding to each
- 26 authorization node data entry and corresponding to a single resource, and having a pointer to
- 27 said corresponding authorization node data entry and either storing raw usage data of said
- 28 corresponding single resource by a particular user and/or distribution organization or containing a
- 29 pointer to a buffer where said raw usage data by said particular user and/or distribution
- 30 organization is stored;
- 31 a distillation program functioning to convert raw usage data for a particular resource
- 32 to metric data which summarizes at least one aspect of use of said resource, each distillation

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33 program linked to a particular resource entry by a pointer in said data structure; and
34 a metrics entry corresponding to each resource used by a particular customer, each
35 metrics entry for storing one or more metrics which summarize at least one aspect of use of the
36 particular resource to which said metrics entry corresponds, each said metric generated by said
37 distillation program linked to said resource to which said metrics entry correspond.

1 2. The memory of claim 1 wherein said user and/or distribution organization data entry in said
2 data structure further contains a pointer to a provisioning item data entry or a provisioning list
3 data entry which stores the terms of a license under which said user and/or distribution
4 organization data entry has rights to use and/or distribute one or more resources pointed to by
5 said provisioning item or provisioning list.

1 3. The memory of claim 1 further storing a mapping program linked to a particular one of said
2 provisioning items and a central service unit entry storing central service unit data, said mapping
3 program authored by a user and/or distribution organization and functioning to convert metrics stored
4 in a metrics entry into different units of measure called central service units each of which can
5 represent usage encoded in one or more metrics, and storing said central service units in a central
6 service unit entry in said data structure.

1 4. A memory for a computer for storing data that defines a data structure accessible by a
2 program executing on a server used for usage based licensing of resources, said data structure
3 comprising:
4 - one or more data objects representing a vendor organization;
5 - one or more data objects representing resource lists which each contain one or
6 more data objects representing resources or suites of resources supplied for usage-based
7 licensing by a vendor organization, each of said resource list data objects being linked by pointer
8 data to data object(s) representing the vendor organization that supplies the resources
9 represented by data objects on said resource list;
10 - a distillation program for every resource represented by a data object forming part
11 of a resource list data object, each said distillation program being capable of reading raw usage
12 data for the resource and converting that raw usage data to metrics representing use of that
13 resource;
14 - a pointer in each data object representing a resource which points to a distillation
15 program for use in converting usage data for said resource into metric data;

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16 - at least one data object representing a provisioning item for each resource, each
17 said provisioning item data object storing data memorializing the operative terms of a licensing
18 agreement which is available for purchase to licensees and/or distributors of a vendor
19 organization which defined the provisioning item, each said provisioning item data object linked
20 by a pointer to the data object representing the vendor organization which defined the
21 provisioning item and further linked to the data object representing the resource or suite of
22 resources to which said provisioning item pertains;

23 - one or more data objects representing sub-organizations declared by one or more
24 of said vendors, each of said sub-organization having a licensee and/or distributors relationship
25 with a vendor organization and each of which has a pointer pointing to a provisioning item which
26 records the terms of the license to said sub-organization;

27 - zero or more data objects representing a sub-organization provisioning item for
28 each resource licensed by a distributor type sub-organization, each said sub-organization
29 provisioning item data object storing data memorializing the operative terms of a licensing
30 agreement which is available for purchase to licensees and/or distributors of said sub-
31 organization which defined the provisioning item, each said sub-organization provisioning item
32 data object linked by a pointer to the data object representing the sub-organization which defined
33 the provisioning item and further linked to the data object representing the resource or suite of
34 resources to which said provisioning item pertains;

35 - zero or more data objects representing sub-sub-organizations declared by one or
36 more of said sub-organizations, each said sub-sub-organization having a licensee and/or vendor
37 relationship to the sub-organization that declared said sub-sub-organization, each said data
38 object representing a sub-sub-organization being linked to the data object representing the sub-
39 organization that declared the existence of said sub-sub-organization and a pointer to at least one
40 sub-organization provisioning item under which said sub-sub-organization has a license;

41 - zero or more data objects representing a sub-sub-organization provisioning item for
42 each resource made available for sub-licensing by a distributor type sub-sub-organization, each
43 said sub-sub-organization provisioning item data object storing data memorializing the operative
44 terms of a licensing agreement which is available for purchase to licensees and/or distributors of
45 said sub-sub-organization which defined the sub-sub-organization provisioning item, each said
46 sub-sub-organization provisioning item data object linked by a pointer to the data object
47 representing the sub-sub-organization which defined the provisioning item and further linked to
48 the data object representing the resource or suite of resources to which said provisioning item
49 pertains;

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50 - zero or more data objects representing sub-sub-sub-organizations declared by one
51 or more sub-sub-organizations, each said data object representing a sub-sub-sub organization
52 representing an entity which has a licensee and/or distributor relationship to the sub-sub
53 organization which declared the existence of said sub-sub-sub organization and linked to the data
54 object representing the sub-sub-organization which declared the existence of said sub-sub-sub
55 organization and further linked to said sub-sub-organization provisioning item that records the
56 terms of the license of said sub-sub-sub organization, and so on for other data objects
57 representing other organizations having licensee and/or distributor relationships with any other
58 organization represented by a data object in said data structure to any level of complexity;
59 - zero or more authorization node data entries each of which represents a license
60 taken by an organization represented by a data entry in said data structure, each said
61 authorization node data entry linked by a pointer to the data entry representing the organization
62 which took said license, and linked by a pointer to one or more of said provisioning item data
63 entries which records the terms of the license represented by said authorization node;
64 -for every authorization node data entry, one or more resource authorization node
65 data entries, one for each resource licensed under the license represented by said authorization
66 node data entry, and each of which is linked by a pointer to the authorization node data entry
67 representing the license under which use of said resource is authorized, and each of which either
68 stores usage data for the corresponding resource or points to a usage data buffer elsewhere
69 which stores said usage data.

1 5. A memory in a computer storing a data structure modelling a distribution system for the
2 sale of resources, said data structure comprising:
3 a resource list having one or more resource entries, each of which comprises data
4 declaring the existence of a particular resource or a group of two or more resources offered for
5 sale;
6 a pointer in each resource entry pointing to a distillation program which, when
7 executed, converts raw sales data for the corresponding resource by a particular buyer into one
8 or more items of metric data summarizing at least one aspect of purchases of said resource by
9 said customer;
10 an organization data entry representing a vendor organization that supplies said
11 resources for sale and which created said resource list, said organization data entry including a
12 pointer to said resource list and including a pointer to a provisioning list;
13 at least one provisioning list data entry containing one or more provisioning item data

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14 entrys, each said provisioning item data entry comprising data defining terms of sale for a
15 particular resource or a group of two or more resources offered for sale as a package and
16 containing a pointer to one or more resource entrys for which said provisioning item represents
17 licensing terms;

18 an authorization node data entry corresponding to a sale which has been
19 consumated under a particular provisioning item data entry, each authorization node data entry
20 containing a pointer to the provisioning item data entry which records the terms of sale said
21 authorization node data entry represents;

22 at least one purchaser and/or distribution organization data entry defining a
23 purchaser and/or distribution organization, and containing a pointer to at least one authorization
24 node data entry;

25 at least one resource authorization node data entry corresponding to each
26 authorization node data entry and corresponding to a single resource, and having a pointer to
27 said corresponding authorization node data entry and either storing raw purchase data of said
28 corresponding single resource by a particular purchaser and/or distribution organization or
29 containing a pointer to a buffer where said raw purchase data by said particular user and/or
30 distribution organization is stored;

31 a distillation program functioning to convert raw usage data for a particular resource
32 to metric data which summarizes at least one aspect of the purchase of said resource, each
33 distillation program linked to a particular resource entry by a pointer in said data structure; and

34 a metrics entry corresponding to each resource purchased by a particular customer,
35 each metrics entry for storing one or more metrics which summarize at least one aspect of
36 purchase of the particular resource to which said metrics entry corresponds, each said metric
37 generated by said distillation program linked to said resource to which said metrics entry
38 corresponds.

1 6. A memory for storing data defining a data structure accessible by a program stored on a
2 server, said data structure comprising:

3 1) data entrys that define vendors or resources and the resources that are available
4 for usage-based licensing;

5 2) one or more data entrys which define the terms of each available licensing deal in
6 addition to data that allows each available license deal to be connected to the entity that offers it
7 and the resources licensed under the deal;

8 3) zero or more data entrys that define licensee or distributor entities which have

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9 taken a license under one or more license deals and data that allows these data entries to be
10 connected to the particular terms of the license deal or deals the entity has the right to accept and
11 the resources which may be licensed under each available license deal and the licensor which
12 offers each license deal;

13 4) an authorization node data entry that represents every license deal that has been
14 accepted and data that connects that entry to said licensor or distributor entity that took the
15 license and the data entries that represent the terms of the license and the licensor entity such as
16 a vendor entity or distributor entity; and

17 5) data entries comprising usage data for each particular licensed resource
18 memorializing use by each entity that has used the resource and data that can be used to
19 connect said usage data to the data entries that represent the license deal under which the usage
20 was made; and further comprising

21 at least one distillation program stored in said memory for every resource available
22 for licensing which is coupled by pointer data to the resource to which said distillation program
23 pertains, said distillation program for controlling said server to take the usage data for a licensed
24 resource which has been used and convert said usage data to metric data.

1 7. The memory of claim 6 wherein at least some of said at least one distillation program are
2 programmable spreadsheets which are programmed with formulas which certain user with access
3 privileges can alter.

1 8. The memory of claim 6 further comprising stored data which defined a mapping program
2 capable of controlling said server to access metric data and convert said metric data to central
3 service unit data.

1 9. A server apparatus having data stored therein or in a disk array coupled to said server
2 which is accessible by one or more programs on said server and which defines a data structure, said
3 data structure comprising:

4 a resource list having one or more resource entries, each of which comprises data
5 declaring the existence of a particular resource or a group of two or more resources offered
6 for usage-based licensing;

7 a pointer in each resource entry pointing to a distillation program which, when
8 executed, converts raw usage data for the corresponding resource by a particular customer
9 into one or more items of metric data summarizing at least one aspect of usage of said

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resource by said customer;

an organization data entry representing a vendor organization that supplies said resources for licensing and which created said resource list, said organization data entry including a pointer to said resource list and including a pointer to a provisioning list;

at least one provisioning list data entry containing one or more provisioning item data entrys, each said provisioning item data entry comprising data defining licensing terms for a particular resource or a group of two or more resources offered as a package and containing a pointer to one or more resource entrys for which said provisioning item represents licensing terms;

an authorization node data entry corresponding to a license which has been granted under a particular provisioning item data entry, each authorization node data entry containing a pointer to the provisioning item data entry which records the license terms said authorization node data entry represents;

at least one user and/or distribution organization data entry defining a user and/or distribution organization, and containing a pointer to at least one authorization node data entry;

at least one resource authorization node data entry corresponding to each authorization node data entry and corresponding to a single resource, and having a pointer to said corresponding authorization node data entry and either storing raw usage data of said corresponding single resource by a particular user and/or distribution organization or containing a pointer to a buffer where said raw usage data by said particular user and/or distribution organization is stored;

a distillation program functioning to convert raw usage data for a particular resource to metric data which summarizes at least one aspect of use of said resource, each distillation program linked to a particular resource entry by a pointer in said data structure; and

a metrics entry corresponding to each resource used by a particular customer, each metrics entry for storing one or more metrics which summarize at least one aspect of use of the particular resource to which said metrics entry corresponds, each said metric generated by said distillation program linked to said resource to which said metrics entry corresponds.